



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,672	04/26/2005	Michihiko Takase	2005_0643A	8709
513 7590 11/10/2009 WENDEROTH, LIND & PONACK, L.L.P. 1030 15th Street, N.W., Suite 400 East Washington, DC 20005-1503				
EXAMINER				
BURKHART, ELIZABETH A				
ART UNIT		PAPER NUMBER		
1792				
MAIL DATE		DELIVERY MODE		
11/10/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/532,672

Applicant(s)

TAKASE, MICHIIKO

Examiner

Elizabeth Burkhart

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 6-9 are pending in the application. Amended claims 6-9 have been noted.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/28/2009 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shintani (JP 11-080952) in view of Sakemi et al ('394), Okuyama et al (JP 2001-243886), and Shiokawa et al (US 2003/0077972) or Nishimura et al (US 2004/0135506).

Shintani teaches a process for forming an MgO film onto a substrate of an AC type plasma display panel [0002] while maintaining a degree of vacuum in the deposition room within a certain range (Abstract). The amount of oxygen introduced into the deposition room is controlled and the amount of gas exhausted from the deposition

room is controlled to maintain a certain degree of vacuum within the room [0002], [0004]-[0006]. Since both the amount of oxygen gas being introduced to the deposition room and the amount of gas exhausted from the deposition room are being controlled, one of ordinary skill in the art would have readily envisaged equilibrating these amounts to maintain the degree of vacuum within the deposition room at a desired value.

Shintani does not teach the specific range in which the degree of vacuum is maintained or that an inert gas and a gas selected from the group consisting of water, carbon monoxide, and carbon dioxide are also introduced to the deposition room.

Sakemi teaches a similar method of depositing a MgO film onto a substrate for a plasma display panel wherein the degree of vacuum during deposition is within the claimed range because the greater the vacuum is below 10^{-4} torr (1.3×10^{-2} Pa), the easier it is for MgO to vaporize which increases the growth rate of the film (Abstract, Col. 1, lines 30-40, Col. 2, lines 50-55, Col. 4, lines 54-58).

Okuyama teaches a method for forming an MgO film on a plasma display panel (Abstract) wherein a mixed gas containing an inert gas and oxygen may be introduced to the chamber during deposition in order to control membranous quality of the film. Okuyama also teaches that the introduction of oxygen reduces oxygen deficiency [0025].

Shiokawa teaches introducing a small amount of water vapor to the chamber during deposition of a protective layer for PDPs, such as MgO, in order to reduce impurities and reduce static electricity. Shiokawa also teaches that MgO has the property of absorbing water and by introducing larger amounts of water vapor may

degrade its performances [0006]-[0007]. The partial pressure of water vapor during MgO deposition should be 10 mPa or lower (1×10^{-3} Pa or lower) (Abstract, [0013], [0017]).

Alternatively, Nishimura teaches a method of manufacturing a PDP having a MgO protective layer wherein carbon dioxide or water vapor is introduced in order to form a PDP having lower discharge voltage, more stable discharge, higher luminance, higher efficiency, and longer life. The amount of carbon dioxide being introduced is controlled to realize the desired effects (Abstract, [0037]-[0041]).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to operate the process of Shintani under a degree of vacuum within the claimed range as suggested by Sakemi in order to vaporize the MgO more easily, which leads to an improved growth rate of the film, and incorporate an inert gas into the process of Shintani as suggested by Okuyama in order to control the membranous quality of the film. Further, it would have been obvious to introduce water or carbon dioxide as suggested by Shiokawa or Nishimura during the process of Shintani in order to reduce static electricity and impurities (Shiokawa) and form a PDP with desired properties, i.e. lower discharge voltage, stable discharge, etc. (Nishimura). Also, one of ordinary skill would have expected similar results using carbon monoxide since it has similar structure and properties to carbon dioxide.

Regarding Claims 6-9, Since Shintani teaches controlling the amount of gas (oxygen) introduced, it would have been obvious to one of ordinary skill in the art to control the amount of any gases being introduced, such as inert gas or water or carbon

dioxide, to maintain the desired degree of vacuum. Also, it would have been obvious to one of ordinary skill to introduce oxygen or water or carbon dioxide in a predetermined amount in order to deposit a film having a desired properties since Okuyama discloses a relationship between the oxygen introduced and the oxygen deficiency in the deposition room, Shiokawa discloses a relationship between water introduced and reduction of static electricity, and Nishimura discloses a relationship between carbon dioxide or water introduced and desired properties of the PDP.

Thus, claims 6-9 would have been obvious within the meaning of 35 USC 103 over the combined teachings of Shintani, Sakemi, Okuyama, and Shiokawa or Nishimura.

Response to Arguments

4. Applicant argues that the previously cited references do not disclose introducing a gas selected from the group consisting of water, carbon dioxide, and carbon monoxide. This argument has been addressed by the new rejection above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Burkhart whose telephone number is (571)272-6647. The examiner can normally be reached on M-Th 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elizabeth Burkhart/
Examiner, Art Unit 1792

/Timothy H Meeks/
Supervisory Patent Examiner, Art Unit 1792